

57 - NUTRITIONAL STATUS PROFILE OF SCHOOLCHILDREN AGED 6 TO 18 YEARS: A CASE STUDY AT SESI-SP

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INTRODUCTION

The World Health Organization (WHO) defines health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, and determines for the 21st century, health as a shared responsibility for essential care and collective defense against transnational threats (BRAZIL, 2002). The School Health Programs constitute established guidelines with objectives aiming at promoting health and culture of peace, reinforcing health damage prevention, contributing to constituting conditions for the integral formation of schoolchildren, facing the vulnerabilities in the health field, which could compromise the entire school development (BRAZIL, 2009).

According to the IBGE database, some indicators are considered as health protection behaviors in the school environment, such as consumption of fruits, vegetables, beans and the practice of the physical activity; while other indicators have been associated with risk behaviors such as consumption of soft drinks and candies, regular smoking, use of alcohol, sedentary leisure, absence of physical activity and excess weight (IBGE, 2009).

Excess weight and obesity have been one of the main negative indicators of population health. The prevalence of obesity and overweight in children is considered a public health issue worldwide (ANTONIO; BOCALETTO and VILARTA, 2010). In Brazil, nearly 3 million children with less than 10 years of age present obesity (BRAZIL, 2011). According to Pollock and Wilmore 1993 apud Legnani et al., 2011, obesity is defined by excess weight as a condition in which weight exceeds the ideal percentage, based on gender, height, and biotype.

According to the WHO, the prevalence of child obesity has increased around 10 to 40% in most European countries and in Brazil over the last ten years, and this diagnosis is constantly increasing (LEGNANI et al., 2011). Thus, the present study aimed at evaluating the nutritional status of schoolchildren from 6 to 18 years of age, at six school units of the Industry Social Service (SESI-SP) in Araçatuba and its jurisdiction.

METHODS

Descriptive study carried out with secondary data referring to the results section of the "Healthy School Program" developed by the Industry Social Service (SESI-SP). The Program began in the second semester of 2011 and was divided into three subsequent phases: (A) Health Awareness, (B) Action and Results and (C) Health Education. Phase A was carried out in the second semester of 2011 and it was composed by the evaluation of visual and hearing perceptiveness, buccal health and food quality, gaging of anthropometric measurements and blood pressure, as well as review of the vaccination records of all students of the SESI-SP School Network. Of these variables, the anthropometric measurements were used in the present study. The authorization for use of the secondary data was signed by the director of the Health Division of the SESI-SP and approved by the Research Ethics Committee of the University of Franca (CAAE: 07360212.30000.5495). Given that it is secondary data, the Free and Informed Consent Form was not necessary.

The study subjects were children and adolescents between 6 and 18 years of age of both sexes, regularly enrolled in the SESI-SP school system, attending middle and high school, in the year of 2011. The studied variables were: weight, height, gender, school units and age. For the present study, SESI-SP authorized the use of the data from six school units, three located in Araçatuba city, and the others in the regions of Andradina, Guararapes and Mirandópolis, totaling 2.653 students.

The measurements used in the anthropometric evaluation were: weight and height. The evaluation was performed by a team hired specifically for this study, composed by five nursing assistants and eight nurses, along with the nutritionists and life quality analyst of each SESI-SP unit. The measuring of physical weight was carried out in students wearing the uniform T-shirt and/or sweatshirt only using a mechanical or electronic scale properly certified by Inmetro and positioned on a flat surface. The measuring of the height was carried out using a portable, stadiometer (Altura Exata®), with 0.1 cm accuracy. Students were asked to stand up barefoot, in erect position on a horizontal flat surface; two measures were carried out, considering the average for the exact result. For the classification of the nutritional status of the schoolchildren from 6 to 18 years, the BMI-for-age was used, which was calculated by dividing the weight in kilograms by the square height. Both the BMI calculation and the classification itself were carried out by the investigator, using the AnthroPlus® software program, which uses the curves proposed by the WHO in 2006/2007.

The independent variables were: gender, age and school units. The school units were grouped according to the origin: Educational Center (EC) 281, 349 and 351 located in Araçatuba (SP, Brazil), EC 025 in Andradina city (SP, Brazil), EC 237 in Guararapes city (SP, Brazil) and EC 323 located in the Mirandópolis region (SP, Brazil).

The statistical analysis was performed using the Grafpad® software, version 3.06 for Windows, considering a 5% significance level. For data analysis, descriptive statistics was applied, and the results were presented as frequency and percentages or averages and standard deviations. The chi-square test was applied to evaluate the association between the nutritional status and gender (ZAR, 1999). The statistical tests considered the classification of the general nutritional status and in other cases only the overweight or obesity or excess weight, priorities of the study were considered.

RESULTS

The absolute prevalence of the nutritional status of schoolchildren considering excess weight, which is overweight, added to obesity, in the sample presents an elevated number represented by many students (39.8%), as shown in Figure 1.

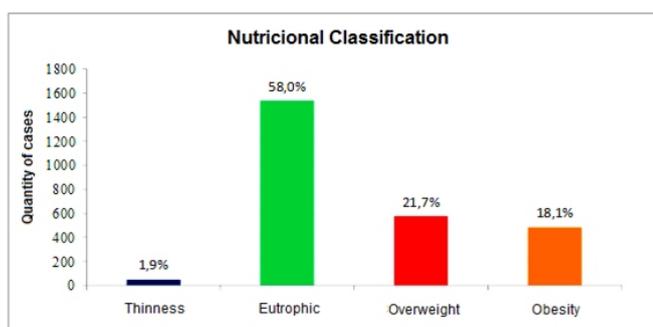


Figure 1. General characterization of the prevalence of overweight and obesity in children and adolescents of the SESI-SP private school system in Araçatuba (SP, Brazil) and its jurisdiction, in 2011.

The sample was constituted by 1.352 boys (50.9%) and 1.299 girls (49.1%). When isolating those with excess weight (overweight added to obesity) or not and comparing this fact with male or female gender, it was possible to observe a higher proportion of excess weight in the male gender ($p < 0.01$) (Table 1).

Table 1. Classification of nutritional status, according to gender in schoolchildren from SESI-SP, Araçatuba (SP, Brazil) and its jurisdiction, in 2011

Classification	Female (n= 1352)		Male (n= 1299)	
	N	%	N	%
Absence of excess weight	856	64.32%	735	56.58%
Presence of excess weight	496	36.68%	564	43.42%

$p < 0.05$ – according to chi-square test.

DISCUSSION

The present study revealed the nutritional status of 2.653 children and adolescents attending school, in the age group from 6 to 18 years. The epidemiological work presented alarming results of high prevalence of excess weight, nearly 40%, association between obesity and the male gender and between obesity and age from 6 to 10 years.

In the study of Silva (2010), 319 schoolchildren were evaluated with ages between 6 and 10 years, enrolled in public and private schools of the Fernandópolis region (SP, Brazil), and the presented result was 43% of excess weight. In the study of Rinaldi (2009), a prevalence of 35.1% excess weight was found, similar to the results of present study. The study involved 702 children enrolled in public, private and philanthropic elementary schools in the years of 2007 and 2008, in the Botucatu region (SP, Brazil).

According to the Brazilian population data from IBGE, in children aged 5 to 10 years, the estimated prevalence of 5% weight deficit in 1974/1975 was slightly higher than in 1989, with a decline of nearly 2% and an increase of nearly 4% in 2008-2009. On the other hand, the prevalence of excess weight presented constant rise and increased drastically for children and adolescents in the same period (IBGE, 2010). Thus, it is a fact that Brazil has faced a nutritional transition, with changes in the dietetic and nutritional standards of the population of all social levels and age groups, characterized by the reduction in the prevalence of nutritional deficits and excessive increase of overweight and obesity.

Among the most frequently addressed risk factors for obesity are: sedentarism and inadequate food habits. Structured, guided and repetitive planned physical exercise along with active leisure as insertion of the practice of physical activity during free times are contributing factors to prevent the increase of obesity and overweight of the population (PIMENTEL, 2012). Active leisure is fundamental for the quality of life of children and adolescents. Baruki et al. (2006) noticed that eutrophic children spent less time in activities such as watching television for more than three hours/day and playing video games for more than two hours/day than children with overweight and obesity, confirming evidences that these factors are straightly connected with overweight and obesity. Children who watch television for more than four hours/day are less active and more obese. Rodriguez et al. (2011) ranked some reasons why children and adolescents have been less active: longer time in front of television, Internet and video games, a reduced amount of physical education classes in schools and fewer active leisure options.

The Schoolchildren Health survey carried out by the IBGE 2009 mentions the recommendation of the WHO, that children should not spend more than one or two daily hours in front of television or video games. Despite this recommendation, significant data from the National Schoolchildren Health survey (IBGE, 2009) showed that 79.5% of schoolchildren attending grade 9 watched television for two or more hours daily, which partially explains the Brazilian results of increased prevalence of excess weight.

In face of the obtained results, it is important to emphasize the association between male gender and obesity. Data from the National Schoolchildren Health survey showed that, over the 34 years from 1974, excess weight in the male gender has rapidly increased 6 folds, from 3.7% to 21.7% (IBGE, 2009). Differently from girls who presented a 3-fold increase, from 7.6% to 19.4%. Ferrari (2009), while studying the nutritional status in children and adolescents attending school, observed obesity data in respectively 53.3% and 45.4%, with higher incidence in the male gender.

The early detection of children and adolescents with higher risk for the development of obesity allows a more favorable long-term prognosis (SOTELO, COLUGNATI, TADEI, 2004). It is important to emphasize that the present study addresses private SESI-SP schools, one of the largest private school systems of the state. SESI-SP promotes integrated actions to control excess weight in the school population, enhancing joint actions for proper eating habits and equal access to physical activity to all students.

It can be concluded that the prevalence of excess weight was elevated, higher in the boys than in girls and in ages between 6 to 10 years. It is important to include in the school curriculum, aspects that effectively contribute to provide schoolchildren with autonomy to choose their habits and life style, and that these may continue in the course of their adulthood, as well as involve professionals and those in charge at the school extent in the empowerment of these actions that reflect in the quality of life and health promotion.

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NUTRITIONAL STATUS PROFILE OF SCHOOLCHILDREN AGED 6 TO 18 YEARS: A CASE STUDY AT SESI-SP ABSTRACT

The objective of this study was to evaluate the profile of the nutritional status of six school units of SESI-SP Araçatuba and its jurisdiction. The descriptive data analysis involved 2,653 students aged between 6 and 18 years old. The variables obtained were: age, sex, weight, height, body mass index (BMI) and school units. The classification of nutritional status was performed in AnthroPlus® program using BMI-for-age, according to the bows from the World Health Organization 2006/2007. About 40% of the students were overweight. There was no association between the nutritional status and the school units ($p = 0.71$). There was a higher frequency of overweight in males (43.42%) than in females (36.68%) ($p < 0.05$).

KEYWORDS: Nutritional status, obesity, school health.

PROFIL DE L'ÉTAT NUTRITIONNEL DES ÉTUDIANTS DE 6 À 18 ANS: UNE ÉTUDE DE CAS SESI-SP RÉSUMÉ

L'objectif de cette étude était d'évaluer le profil de l'état nutritionnel des six unités scolaires de SESI-SP Araçatuba et sa juridiction. L'analyse descriptive des données secondaires impliqué 2.653 étudiants âgés entre 6 et 18 ans. Les variables obtenues étaient: âge, sexe, poids, taille, indice de masse corporelle (IMC) et unités scolaires. La classification de l'état nutritionnel a été effectuée dans le programme AnthroPlus®

envisagent de l'IMC-pour-âge, selon des courbes de l'Organisation Mondiale de la Santé 2006/2007. Environ 40% des étudiants étaient en surpoids. Il n'y avait pas d'association entre l'état nutritionnel et les unités scolaires ($p = 0,71$). Il y avait une plus grande fréquence de la surcharge pondérale chez les hommes (43,42 %) que chez les femmes (36,68%) ($p < 0,05$).

PERFIL DEL ESTADO NUTRICIONAL EN LA ESCUELA DE 6 A 18 AÑOS : UN ESTUDIO DE CASO DE SESI-SP RESUMEN

El objetivo del estudio fue evaluar el perfil de la situación nutricional de seis unidades escolares de SESI-SP Araçatuba y su jurisdicción. Análisis descriptivo de los datos secundarios involucró 2.653 estudiantes en edad escolar de 6 a 18 años de edad. Los valores obtenidos fueron: edad, sexo, peso, talla, índice de masa corporal (IMC) y la escuela de unidades. La clasificación del estado nutricional se realizó en el programa AnthroPlus® utilizando el IMC para la edad, a lo largo de curva 2006/2007. Alrededor del 40 % de los estudiantes tenían sobrepeso. No hubo asociación entre las unidades de estado y de la escuela de nutrición ($p = 0,71$). Hubo una mayor prevalencia de sobrepeso en los hombres (43,42 %) que en mujeres (36,68 %) ($p < 0,05$).

PERFIL DO ESTADO NUTRICIONAL EM ESCOLARES DE 6 A 18 ANOS: UM ESTUDO DE CASO DO SESI-SP RESUMO

O objetivo deste estudo foi avaliar o perfil do estado nutricional de seis unidades escolares do SESI-SP de Araçatuba e sua jurisdição. Análise descritiva de dados secundários envolveu 2.653 estudantes com idade escolar entre 6 e 18 anos de idade. As variáveis obtidas foram: idade, sexo, peso, estatura, índice de massa corporal (IMC) e unidades escolares. A classificação do estado nutricional foi realizada no programa AnthroPlus® considerando o IMC para a idade, segundo curvas 2006/2007. Cerca de 40% dos alunos apresentaram excesso de peso. Não houve associação entre o estado nutricional e as unidades escolares ($p = 0,71$). Houve maior prevalência de excesso de peso no sexo masculino (43,42% %) do que no sexo feminino (36,68%) ($p < 0,05$).

PALAVRAS-CHAVE: Estado nutricional, obesidade, saúde escolar.